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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,367	02/21/2002	Andrew Li	2002P000329US	2638

7590 01/13/2004  
Siemens Corporation  
Intellectual Property Department  
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Iselin, NJ 08830

EXAMINER

IMAM, ALI M

ART UNIT PAPER NUMBER

3737

DATE MAILED: 01/13/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/080,367

Applicant(s)

LI ET AL.

Examiner

Ali Imam

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10/27/3 (Amendment).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24 is/are allowed.
- 6) ☒ Claim(s) 1,4,8-10,12-23 and 25 is/are rejected.
- 7) ☒ Claim(s) 2,3,5-7 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. In response to the amendment filed 10/27/2003, all necessary changes to the claims have been entered.

### ***Response to Arguments***

2. Applicant's arguments filed 10/27/2003 have been fully considered but they are not persuasive. Applicant's core argument is that Mucci fails to teach the step and structure for determining a transmitter power level or reduction factor as a function of the lowest dynamic range value or of the excess signal-to-noise ratio. The examiner respectfully disagrees. Mucci's ultrasound system and method is directed to an automatic determination of transmit power level. Particularly, the system and method takes into account the relevant noise, signal parameters, and the range of signal values/dynamic range in order to adjust and determine the transmit power level automatically (col. 3, lines 50-56). The lowest value of the dynamic range would inherently be taken into account since Mucci teaches in col. 8, lines 17-67 that it's system and method eliminates the need for the operator to select a gray-scale function in conjunction with other system controls such as transmit power level and receive gain. Mucci's system and method does this operation automatically so as to fit the received data to the dynamic range of the display as well as to provide an amount of non-linearity to achieve noise rejection and signal contrast appropriate to diagnostic purposes.

Art Unit: 3737

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 4, 8-10, 12-23, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over

In regard to claims 1, 8-10, 13-23, and 25, Mucci et al. (hereinafter "Mucci") teaches an ultrasound method for automatically determining a transmitter power level (col. 9, line 57 - col. 10, line 13) comprising the steps and structures for determining a noise level or an excess signal-to-noise ratio with a processor (24); determining a lowest value of a display dynamic range (col. 8, line 17 - col. 9, line 9). Mucci fails to mention specifically that the transmitter power level or power reduction factor is determined as a function of the noise level and the lowest value or as

Art Unit: 3737

function of the excess power. Mucci, however, teaches in Fig. 7, a method for determining amplitude as a function of noise level. It would have been obvious to an ordinary skill in the art at the time the invention was made to recognize that the amplitude defines the transmitter power level of the ultrasound signal for imaging an object. The motivation for determining transmitter power level as a function of noise level is to provide ultrasound image with higher resolution. Furthermore, The lowest value of the dynamic range would inherently be taken into account since Mucci teaches in col. 8, lines 17-67 that it's system and method eliminates the need for the operator to select a gray-scale function in conjunction with other system controls such as transmit power level and receive gain. Mucci's system and method does this operation automatically so as to fit the received data to the dynamic range of the display as well as to provide an amount of non-linearity to achieve noise rejection and signal contrast appropriate to diagnostic purposes.

In regard to claims 4 and 12, Mucci teaches the steps and structures for automatic gain control (col. 3, line 55-56).

***Allowable Subject Matter***

6. Claim 24 is allowed.
7. Claims 2, 3, 5-7, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art alone or in combination teaches or suggests the specific limitations of the

Art Unit: 3737

steps of iterative reduction of transmit power; and determining the difference between a first signal at a default power level and a second signal at a power level responsive to the iterative step.

### *Conclusion*

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Imam whose telephone number is 703-305-0028. The examiner can normally be reached on Mon. - Th., 8:00- 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dennis Ruhl can be reached on 703-308-2262. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3737

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.



Ali Imam  
Primary Examiner  
Art Unit 3737

AMI  
1/12/4